

Gmap4

Trip Planning and Custom Maps

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For more documentation see the [Gmap4 Help page](#)

Also see the “[What is new](#)” page

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1. Introduction

The Menu ==> “Draw and Save” feature lets you click on the map to make waypoints and/or draw a line. You have full ability to edit the information for any point you place on the map. You can save the data for your custom map in any of three different ways:

- a. Download and save a GPX file
- b. Download and save a delimited text file
- c. Display and copy a **map-in-a-link** that saves your data right in a Gmap4 link

Unless you specifically want a GPX file, be sure to try the **map-in-a-link** feature. This lets you save your work right in a Gmap4 link and thus eliminate the nuisance of having to deal with a data file. All of the syntax that you can use with a delimited text file you can also use with the map-in-a-link feature.

The following sections provide more information on these three ways to save your data.

Tip: The GPX section includes useful information to help you make your custom map. Even if you plan to save your data using one of the other methods, you will get information to help you make your custom map if you also read the GPX section.

Tip: Likewise, if you are planning to save your data as part of the Gmap4 link, then it will help you to also read the section on delimited files. Here is the reason. When you save your data right in the Gmap4 link you are actually using the very same syntax (with one small exception)

that is used for delimited files. By reading about the delimited file syntax, you will get ideas for how to use the map-in-a-link feature to make better maps.

2. Save the data for your map in a file

a. Save a GPX file

NOTE: Please also see the section titled “Use Gmap4 to make GPX files” in the **Quick Start** pdf file which can be downloaded from the [Gmap4 Help page](#).

To turn this feature on, click Menu ==> Draw and Save.

While the “draw and save” feature is active you will not be able to click on a GIS symbol to display the attribute data.

On the next screen it is usually best to select “waypoint and linepoint”. This choice means that each time you click the map your GPX file will have both a waypoint and routepoint. If you are making a GPX file, linepoint is a synonym for routepoint.

This feature also works on most smartphones, tablets and other mobile devices.

Reminder: Gmap4 runs in your browser and the browser has to be online. After you turn on this feature then tap the map to set a draggable symbol. Tap a symbol to display a popup that includes a button that opens the ‘Action’ menu. The ‘Action’ menu lets you display or save your work. Note that it is not possible for Gmap4 to save a file on your mobile device. Instead, one option is to ‘display’ the file you made, copy it, paste the copy into an email and email it to yourself.

Whether you think of this tool as **trip planning** or map making, the idea is the same. You click the map to set draggable points and draw lines. You can then download and save your work as a GPX file. This tool is oriented toward making a standard GPX file that will be uploaded to a handheld GPS unit and used for hiking or other human powered recreation. You can also make a GPX file, place it online and then make a Gmap4 link that will display your file.

After you read the short section in the ‘Quick Start’ pdf file titled “Use Gmap4 to make GPX files” and then turn this feature on and play with it. You will quickly discover that **Gmap4 includes trip planning features not found in most other free software**. For example, with one click you can set both a waypoint and routepoint that have identical coordinates. You can also assign a GPS symbol name to each waypoint. In addition you can set a bunch of trackpoints and then go back and designate just certain ones to also be routepoints and/or waypoints.

The **first key design goal** for the Gmap4 trip planning feature was “**click once - write many**”. Most (?all?) other free online trip planning tools limit you to making only one type of point (waypoint or routepoint or trackpoint) for your GPX file when you click the map. Some of these tools will only make routepoints and will not make trackpoints at all, or vice versa. By contrast,

Gmap4 provides checkboxes for each point that you can use to identify the point as a waypoint and/or routepoint and/or trackpoint.

The **second key design goal** for the Gmap4 trip planning feature was “stickiness”. In other words, the next point you make should have characteristics that are similar to the prior point you made. For example, if you are making waypoints then the default GPS symbol name will be the same as the GPS symbol name of the prior point. If you change the GPS symbol name then that new name will be used as the default for the next waypoint you make.

Garmin GPS units include many different symbols that can be displayed on the GPS screen at your waypoints. Garmin has assigned each symbol a different name. Most free trip planning software does not let you specify those symbol names as you plan your trip. As a result, all of your waypoints show the same default symbol when you view them on your GPS screen. By contrast, Gmap4 lets you edit any waypoint and provide a GPS symbol name. You might have to do a bit of research to learn the symbol names that are available on your specific GPS unit.

Key to Gmap4 trip planning symbols

Waypoint	Red paddle with black dot
Routepoint	A symbol with at least one red line connected to it
Trackpoint	A symbol with at least one black line connected to it
Routes	Red lines
Tracks	Black lines

Each symbol can be a waypoint and/or routepoint and/or trackpoint. For example:

Red paddle not on a line	Waypoint
Red paddle on red line	Waypoint and routepoint
Black circle on a red line	Routepoint
Black circle on a black line	Trackpoint
Red paddle on red line and black line	Waypoint, routepoint and trackpoint

Any symbol can be dragged (click-hold-drag).

Every time you click a symbol, the information displayed tells you if the point is a waypoint and/or routepoint and/or trackpoint.

Key to symbol clicks

Click a symbol to see information about that point

Right click a symbol to see a context menu listing the following actions.

Smartphone, etc: Touch any symbol and then select “Action menu”. To save a file, first display the GPX or delimited file, copy it and email it to yourself.

- Edit this point
- Delete this point

Insert point before
Insert point after
Pause drawing
Resume drawing
Delete following line points
Delete all drawing data

GPX file display
GPX file download
Delimited file display
Delimited file download

See all your data

Gmap4 link - No description
Gmap4 link - With description
Gmap4 link open - With description

Use current center and zoom

Gmap4 link - No description
Gmap4 link - With description
Gmap4 link open - With description

When you click ‘Edit this point’ then different fields are displayed in the edit window depending on whether the point is a waypoint and/or a routepoint and/or a trackpoint. If you change one of the checkboxes at the top of the ‘Edit’ window, then the rest of the “Edit” window will be revised to only show you the fields that are relevant to the type of point you are editing. For example, if you are editing a point that is only a waypoint, then the ‘Edit’ window will not display the fields for route name or track name.

The trip planning edit window supports both latitude longitude coordinates in decimal degrees and UTM coordinates. If the UTM grid is displayed then when you do trip planning and edit one of your points, you will automatically see UTM coordinates. You can also manually flip between UTM and latitude, longitude when editing one of your points.

When you rightclick a point that is on a route and/or track, then the context menu includes choices to insert a new point either before or after the point you clicked. If you insert a point **after the last point** in a line (or **before the first point** in a line), then the new point is placed to the north and you can drag it where it needs to go.

When you insert a new point in between two existing points then the new point is formed according to the following rules:

- A. If the new point is being added to a red line, then it will be a **routepoint**
- B. If the new point is being added to a black line, then it will be a **trackpoint**
- C. If the new point is being added to a line that is both red and black, then it will be both a **routepoint and trackpoint**
- D. If the point you clicked is a waypoint, then the new point will also be a **waypoint**

There is a special case that will likely not arise very often. Assume you are inserting a point after the point you clicked. Also assume that both a route and track leave the point you clicked but go in different directions. Will the new point go on the route line (red) or on the track line (black)? Answer: The new point will go on the route line (red). You can insert a similar point on the track line (black) by clicking the next trackpoint and insert a new point before the point you clicked.

The rightclick menu also has an option called “Pause”. If you select that option you can then click the map without adding a new symbol. If you select “Resume” and then click the map, a new symbol will be added to the map.

The rightclick menu also has an option for “Delete following line points”. This feature is intended to work with **trackpoints**. Here are the rules for this option:

- If the clicked point is not on a line, do nothing
- If the clicked point is last on the line, do nothing
- If clicked point is both route and track, then delete all following route and track points even if they are also waypoints
- If the clicked point is a trackpoint but not also routepoint, then for the following trackpoints:
 - If the following point is NOT also a routepoint then delete the point entirely.
 - If following point is also a routepoint then only uncheck the routepoint box for that point.

Another rightclick option is “Delete all drawing data.” This feature lets you start over with a new “Draw and save” operation without having to restart Gmap4. Be sure to save any important data you added to the map before deleting that data from the map.

The data for your custom map can be displayed and/or saved using the delimited file format that Gmap4 can read. For more information about the delimited file format, please visit the [Gmap4 Help page](#) and download the pdf file “Delimited Data”.

You can also display different kinds of Gmap4 links where the data for your custom map is saved right in the link itself. In the documentation, this feature is called “**map-in-a-link**” and is a unique feature of Gmap4. If you use this feature then you do not need any data file at all. Anyone who clicks that Gmap4 link will see your custom map. If you save your map as a “Gmap4 link - With description” then when a user clicks a waypoint on your map they will see a popup showing the “description” (i.e. comment) you entered for that waypoint while you were making your map. For waypoints that do not have descriptions Gmap4 will automatically display the waypoint name (the default name is a sequential number) and latitude longitude in the popup.

If you select a Gmap4 link from the group “See all your data” then when the map opens it will be centered and zoomed such that all of your data is on the screen.

If you select a Gmap4 link from the group “Use current center and zoom” then when the map opens it will have the same center and zoom that you currently have on your screen.

For more information on this unique ability to save custom map data right in the Gmap4 link, please search this pdf file for the section titled “Save the data for your map right in the gmap4 link - No file needed!”

Tips and tricks

Here are some examples for how you might use this trip planning tool. Each example assumes that you have (1) turned trip planning on and (2) clicked the map to set one symbol and (3) have not done anything else.

1. To make just waypoints: Uncheck the routepoint box. Click Save & close. Continue clicking the map.
2. To make just trackpoints: Check the trackpoint box and uncheck the other two boxes. Click Save & close. Continue clicking the map.
3. To make just routepoints and then make just waypoints: Uncheck the waypoint box. Make all the routepoints you want. Click the map where you want just a waypoint. Rightclick the point you just made and select "Edit this point". Uncheck the routepoint box. Check the waypoint box. Save & close. Continue clicking the map to make just waypoints.
4. To make waypoints and routepoints and trackpoints: **Wrong way:** Check the trackpoint box (all three boxes are now checked). Save & close. Continue clicking the map. The black line (track) is on top of the red line (route) on the map and while that looks cool, this is most likely not a useful thing to be doing. **Right way #1:** First make just trackpoints. When you are done making trackpoints then edit a few trackpoints and check the boxes to make them also waypoints and/or routepoints. **Right way #2:** First make just waypoints. Then click where you want to start making trackpoints. Edit that point so only the trackpoint box is checked. Make all your trackpoints. Then edit each point that you want to be on your route and add a check to the routepoint box.

GPX under the hood

A GPX file can include up to three kinds of points. They are: waypoints, routepoints and trackpoints. **The software in your GPS does different things with these different kinds of points.** What kind of points should you put in your GPX file so you get the most benefit from your GPS? Part of the answer depends on what kinds of features are provided by the software running in your GPS for these different kinds of points. A little careful experimentation by you will quickly shed light. However, for typical trip planning most people will likely want use Gmap4's default setting which just creates a routepoint each time the map is clicked.

NOTE: Some GPS units cannot read GPX files and do not have any way for you to load a route or track into the GPS. If you need help learning about your Garmin GPS then an excellent resource is the Garmin forums: <https://forums.garmin.com>

Routes v. Tracks

Here are a couple well-written articles describing the difference between routes and tracks.

<http://gpstracklog.com/2010/03/handheld-gps-101-routes-vs-tracks.html>

<http://gpsmap.net/DefiningPoints.html>

Mistakes to avoid

If you want to use Gmap4 to make a GPX file with trackpoints, then usually you want those points to **only** be trackpoints. It is almost certainly a mistake to make a waypoint and/or routepoint at each spot where you are making a trackpoint. In other words, you should probably not make every point a waypoint **and** routepoint **and** trackpoint. On the other hand, it is OK to first make all your trackpoints and then edit a few of those trackpoints to also make them into waypoints and/or routepoints.

Limitations

If you have started to make some routepoints, then you cannot make trackpoints. If you want to make routepoints and trackpoints both, then make your trackpoints first and then edit only those trackpoints that you also was to designate as routepoints.

If you are using Internet Explorer (IE) to do trip planning, then you may see a noticeable lag on your screen as you drag symbols and lines. I recommend you try the current version of Firefox or Chrome. You will likely see better performance.

b. Save a delimited text file

When you use the “Draw and Save” feature then you can save your work as two different types of files, either a GPX file or a **delimited text file**. The syntax used for the delimited files is simpler, shorter, easier to read and more powerful than the syntax used by GPX files. You can get a feel for the difference by first doing some work to make a map and then rightclick any symbol. First display your work as a GPX file and then display your work as a delimited text file. The rightclick context menu also gives you the option to download either type of file. For more information about the delimited file format that Gmap4 can display, please visit the [Gmap4 Help page](#) and download the pdf file “Delimited Data”.

If your main purpose in making a file is to display it with Gmap4, consider saving your file as a delimited text file. If you take a moment to skim through the delimited file examples in the documentation, then you will quickly see the kinds of maps you can make with this type of file and how easy it is to do so.

During the “Draw and Save” process you can also rightclick any symbol and then **edit** the data for that point. The data that you enter (name, coordinates, comment) will be used in your file.

3. Save the data for your map right in the Gmap4 link - No file needed!

This is a super fast and easy way to make a map and share it.
All of your data is stored right in the Gmap4 link itself.
You do not have to bother with any data file.

The “Draw and Save” feature of Gmap4 gives you three ways to save your data. In addition to saving your data as a GPX file or delimited file (see the above two sections) you can also decide to **not use a data file at all** and instead simply store your data in the Gmap4 link. This **map-in-a-link** feature supports a default symbol (red paddle), custom symbols, line color, line width, dashed lines, multiple lines, map title, waypoint labels, clickable labels, popup symbol descriptions and more. You can adjust all these settings.

Anyone can start right now making basic Gmap4 links that include their own custom map data by following these steps:

1. Start Gmap4 and zoom/pan (or Menu ==> Search) so the screen is displaying the area where you want to make a map.
2. Click Menu ==> Draw and Save
3. Select one of the three options. Each click on the map can make a:
Waypoint and linepoint <== Good for GPX files
Linepoint <== **Good for map-in-a-link trip maps**
Waypoint
4. Click the map a few times
5. Right click any symbol and select “Gmap4 link - No description” or “Gmap4 link - With description”. (Mobile users - tap a symbol then select “Action menu”)

Paste that link into a new browser address bar, hit enter and your custom map appears on the screen. **It is just that easy.** Did you notice the “markers” parameter in the Gmap4 link? That parameter holds all of your data.

This map-data-in-a-link feature uses almost the same syntax that is used by the delimited files. Any kind of map that you can make with a delimited file, you can also make by storing that same data in the Gmap4 link. But don’t get too carried away. The usual recommendation is that **links should not exceed 2,000 characters**. After that point some browsers might not be able to correctly understand the link.

Tip: To immediately see your map in a new browser window, rightclick any symbol and select “Gmap4 link open - With description”.

If you go to the [Gmap4 Examples page](#) and scroll down to the section titled “Your map data saved in the Gmap4 link” then you will see a number of example map links that can be made by using the delimited file syntax and saving your data in the Gmap4 link. There is also some **additional text** included with the examples to help you quickly understand the map-in-a-link feature.

Here a few ideas for using this map-in-a-link feature:

- Make a map link showing where you plan to park and hike/bike/ski/hunt/etc. Leave that link with someone who will send it to the authorities if you fail to return or at least call before some agreed upon deadline. This should be particularly useful to people who do things outdoors alone since obviously there

will not be anyone in your party that can go for help if you become injured. The SAR coordinator can open your map link, print your map and pass out copies.

- Make a map link that shows the location of a trip that you plan to lead. Other people that are considering joining you will be able to make a more informed decision if they can see the general route of the trip on a high quality interactive topographic map and maybe also flip to the aerial view.
- Show this to your kids. They can make a map link that shows you where to drive the next time you have to pick up their friends and haul them to an activity. Remember, Gmap4 works in the browser on most **smartphones, tablets and other mobile devices** as long as the browser is online.

For the best understanding of this feature please also take a look at the two preceding sections of this pdf file. The section on saving your map data as a GPX file has information to help you when you are clicking the map to add draggable symbols and perhaps editing the details for those symbols. And the section on saving your map data as a delimited file shows you examples of what can be done with this syntax and how to do it.

There are only two differences using this map-in-a-link method as compared to making the same map by storing your data in a delimited file. First, at the end of each ‘line’ you need to have **two** vertical line characters. The vertical line character is usually an upper case key near the righthand side of most keyboards. Second, if you are using custom color codes then do not include the # character in the Gmap4 link. For example, use color=ff0000 (red) instead of color=#ff0000. Here is the reason. If a browser sees the ‘#’ character in a link then the browser does not read any part of the link after that character.

If you read the section on saving your data as a GPX file then you know that (1) each time you click the map you can make a waypoint and/or routepoint and/or trackpoint and (2) that the ‘edit’ window has three checkboxes that control what kind of point you make with each click. This map-in-a-link feature ignores trackpoints. **This feature will connect routepoints with a line. A point that is only a waypoint (and not also a routepoint) will appear on your map as a standalone symbol.**

When you rightclick a symbol to save your map-in-a-link you can chose between “Gmap4 link - No description” or “Gmap4 link - With description”. If you select “No description” then when a user clicks a waypoint on your map they **will not** see any popup. By contrast, if you select “With description” then when a user clicks a waypoint on your map they **will** see any popup. That popup will display either a description (i.e. comment) you entered for that waypoint or it will display the waypoint name (default is a sequential number) and the latitude longitude for that waypoint.

Here is the final tip. After you copy your Gmap4 link, notice that the ‘ll’ and ‘z’ parameters are not included in the link. Since these parameters are **not** in the link, Gmap4 will automatically center and zoom your map such that all of your data is on the user’s screen. After all, one person might look at your map with a smartphone size screen while the next person looks at your map

with a desktop size screen. If you want to force your map to be centered at a certain spot and/or be zoomed to a certain level then you will have to add the ll and/or z parameters into the Gmap4 link.